

U.S. Pat. App. Ser. No. 10/509,319
Response to Office Action Mailed August 14, 2006

PATENT
Attorney Docket # HAM P2022

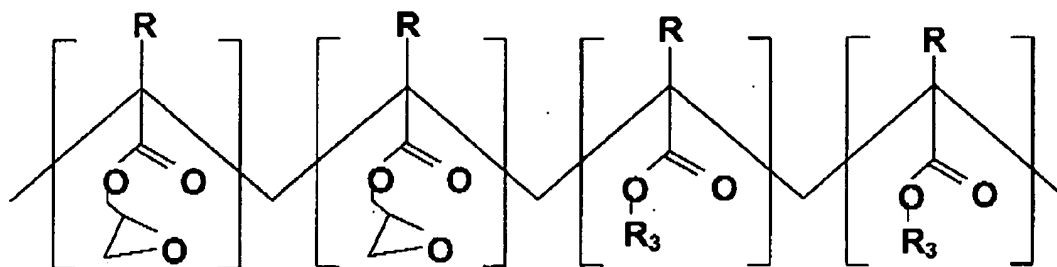
Remarks

Currently pending are claims 1-16. In view of the following remarks, Applicants respectfully request reconsideration by the Examiner, and advancement of the application to allowance.

35 U.S.C. § 103

The Examiner rejected claims 1-8 under 35 U.S.C. § 103(a) as being unpatentable over Awokola et al. (US Pat. No. 6,605,669) in view of Kawase et al. (US Pat No. 5,753,362).

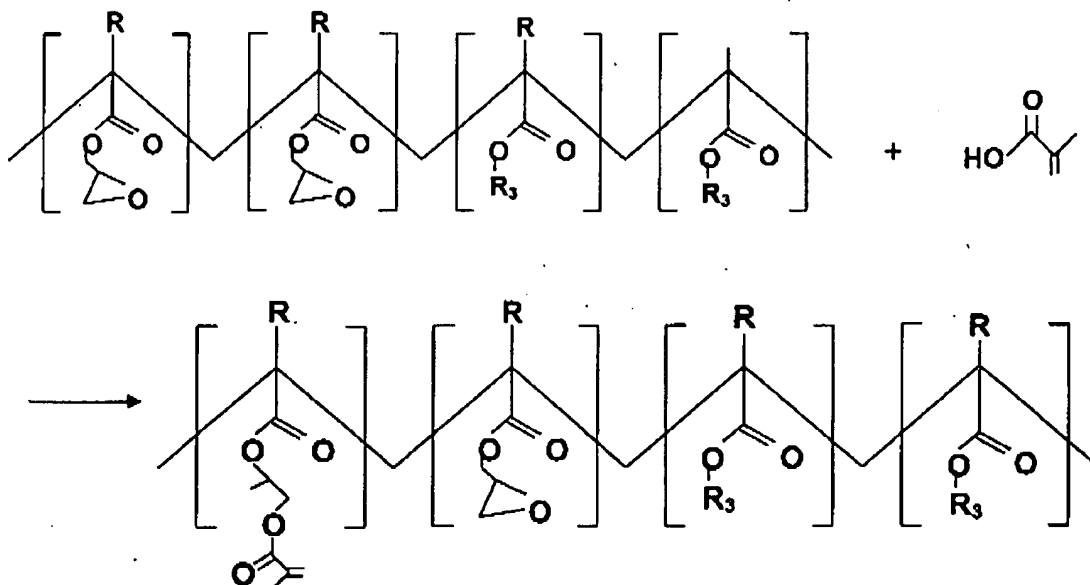
Awokola et al. teaches a dual cure system containing (A) a (meth)acrylic copolymer and (B) a compound having free isocyanate groups. (Meth)acrylic copolymer (A) generally contains (A1) an epoxy functional monomer (A2) a carboxy functional monomer and (A3) another monomer that is different than (A1) and (A2). Awokola et al. teaches copolymer (A) is prepared using a two step process. See US Pat No. 6,605,669 at col. 5, lines 1-54. A first copolymer is prepared from components (A1) (e.g. glycidyl methacrylate) and (A3) (e.g. various (meth)acrylates):



This copolymer is then subsequently reacted with (A2) (e.g. acrylic acid):

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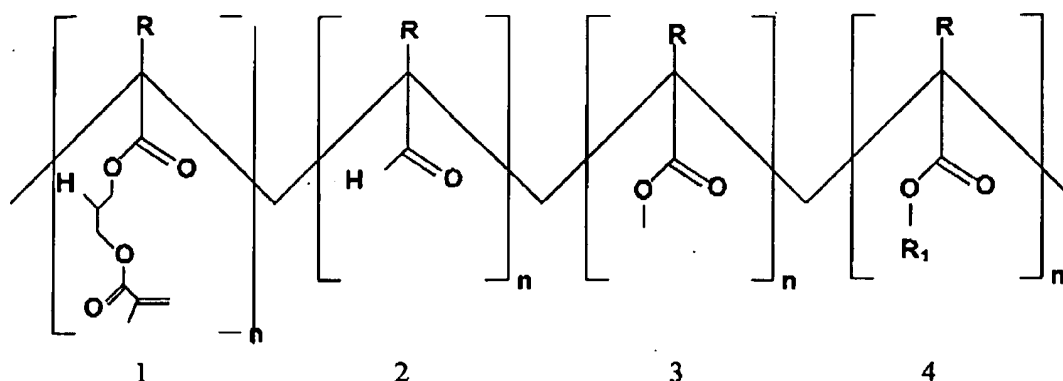


where R is either methyl or hydrogen and R₃ is derived from component (A3). Awokola et al. further teaches that during the reaction, the ratio of epoxy groups to carboxyl groups is from 3:1 to 1:1, and preferably the epoxy groups remain in excess. Thus, the final copolymer contains unreacted glycidyl groups.

In comparison, Applicants claimed reaction product includes: (i) acrylic acid, methacrylic acid or a mixture of acrylic and methacrylic acid and (ii) a (meth)acrylic ester of substituted or unsubstituted phenol, C₁-C₈ hydroxyalkylbenzene or C₁-C₈ hydroxyalkoxybenzene and methyl(meth)acrylate in a ratio (percent by weight) of 7.1:92.9 to 50:50 with 5-90% of the acrylic or (meth)acrylic units having reacted with a glycidylvinyl compound. Therefore, Applicants claim a reaction product having the general structure:

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where R is either hydrogen or methyl and R₁ is substituted or unsubstituted phenol, C₁-C₈ hydroxyalkylbenzene or C₁-C₈ hydroxyalkoxybenzene. As shown above, 1 represents acrylic or (meth)acrylic acid having reacted with a glycidylvinyl compound; 2 represents the acrylic or methacrylic acid having not reacted with a glycidylvinyl compound; and 3 and 4 represent the (meth)acrylates.

Thus, the copolymers disclosed in Awokola et al. are much different than Applicants claimed reaction products. Not only do the copolymers in Awokola et al. have different average molecular mass numbers, the copolymers in Awokola et al. also do not contain acrylic or (meth)acrylic acid in the chain itself nor can they because of the presence of glycidyl acrylates in the formation of the first copolymer.

Furthermore, the copolymers in Awokola et al. are not soluble due to the absence of carboxyl groups. However, solubility is not an important feature in view of the intended use of the copolymer as an automotive coating. In contrast, Applicants reaction products are soluble due to the presence of carboxyl groups which is an important feature for their intended use as a photoresist.

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Thus, in view of the above differences in structure and intended use, adding the teachings of Kawase et al., namely to incorporate a phenol methacrylate into an acrylate copolymer to optimize the glass transition temperature of the copolymer, to Awokola et al. still does not bring one skilled in the art closer to Applicants claimed invention. Applicants respectfully request the rejection under 35 U.S.C. § 103(a) be withdrawn.

Conclusion

Applicants respectfully submit that the application is now in condition for allowance, and respectfully requests issuance of a Notice of Allowance directed towards the pending claims.

Should any fee be due in connection with the filing of this document, the Commissioner for Patents is hereby authorized to deduct said fee from Huntsman Corporation Deposit Account No. 08-3442.

Respectfully Submitted,



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